

## **REMARKS**

Claims 1-2, 4-8, 10-28, 32-35, and 40-45 are pending in this application. Claim 1 is amended in this response.

In the Office Action of January 19, 2007 claims 1, 2, 4-8, 10-28, 32-35 and 40-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Minet et al. (U.S. 5,229,102) in view of Mikus et al. (WO 99/18392) and Topsoe (US 5,169,717).

Applicants respectfully traverse this rejection based on the claims as currently amended.

MPEP § 2143 states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Claim 1 provides a steam reforming-fuel cell system that includes a steam reforming reactor having an outlet for hydrogen and a fuel cell in direct communication with the outlet for hydrogen of the steam reforming reactor.

Minet et al. teaches a steam reforming reactor that employs a tubular ceramic membrane in a heated metallic tube. The steam reforming reactor may be combined with operation of a heat engine or a gas turbine.

Mikus et al. teaches a process heater employing flameless distributed combustion that is in heat exchange relationship with a process chamber. The process heater with flameless distributed combustion may be used in a steam reforming reactor. Hydrogen produced by the steam reforming may be further processed by a secondary reformer to produce methanol or ammonia.

Topsoe teaches an ammonia plant that employs a fuel cell to improve process economy. A carbon dioxide containing stream is passed to the cathode gas loop of the fuel cell and a purge gas stream from the ammonia plant is passed to the anode chamber of the fuel cell.

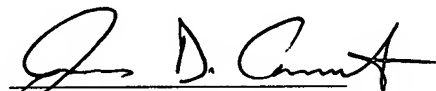
Neither Minet, Mikus, nor Topsoe teach a steam reforming reactor-fuel cell system with the fuel cell system in direct communication with the hydrogen outlet of the steam reforming reactor. As such, the prior art references do not teach or suggest all of the claim limitations of claim 1 and no *prima facie* case of obviousness has been established with respect to claim 1 or claims depending therefrom (claims 2, 4-8, 10-28, 32-35, and 40-45).

In light of the above, Applicants respectfully request allowance of the pending claims in the application.

Respectfully Submitted,

WELLINGTON, Scott Lee et al.

By their attorney:



James D. Carruth  
Reg. No. 55,038  
Shell Oil Company  
(713) 241-0135